

Patient Care Review: Hypoplastic Left Heart Syndrome

Pediatric Rotation

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Patient--MH

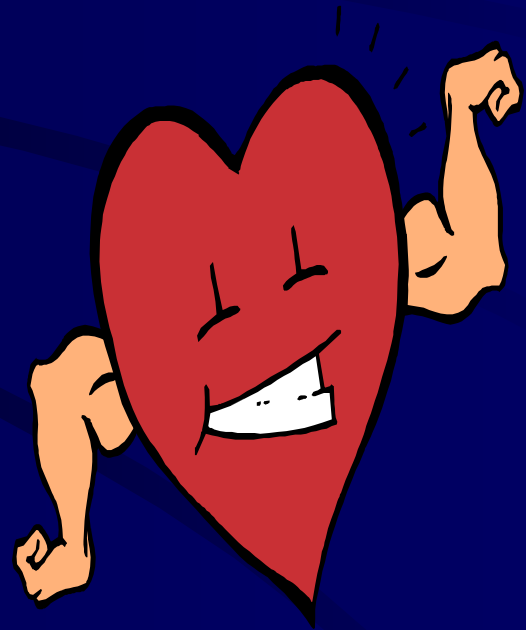
- Identification: 33 mo AAM
- Admission: 16 January 2002
- Chief Complaints: “congestive symptoms”--↓ PO intake, ↑ work of breathing (grunting), ↓ urine output, puffy eyes
- Diagnosis: Congestive Heart Failure

Review of the Diagnosis- Congestive Heart Failure

Definition: Heart fails to do it's job properly as a pump

Etiology:

- Obstruction to blood flow
- Large hole in the heart
- Leaky valve
- Weak muscle



Review of the Diagnosis

Symptoms:

- Tachypnea
- labored breathing
- diaphoresis
- Edema (face and eyes)
- failure to gain wt.
- difficulty feeding
- hepatomegaly
- cyanosis

Review of the Diagnosis

Treatment:

- Rest
- Reduce salt in diet
- Medications

Prognosis:

- Common and serious disease
- Shorted life span

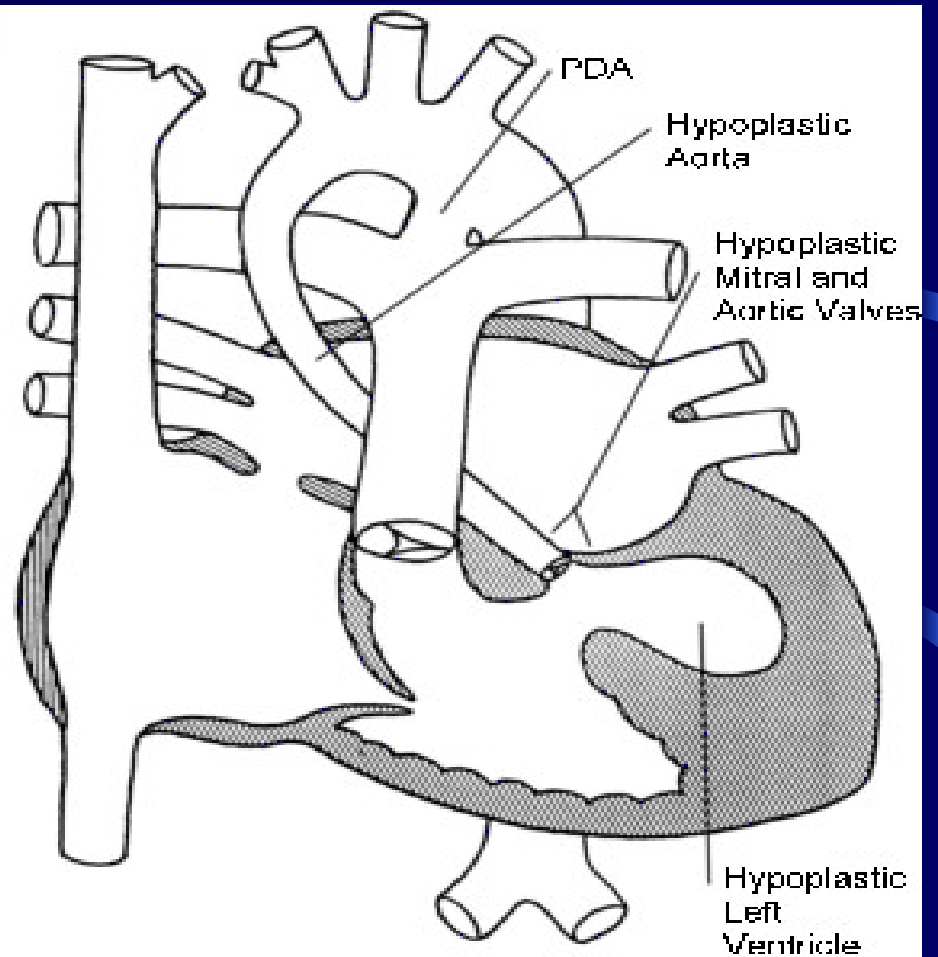
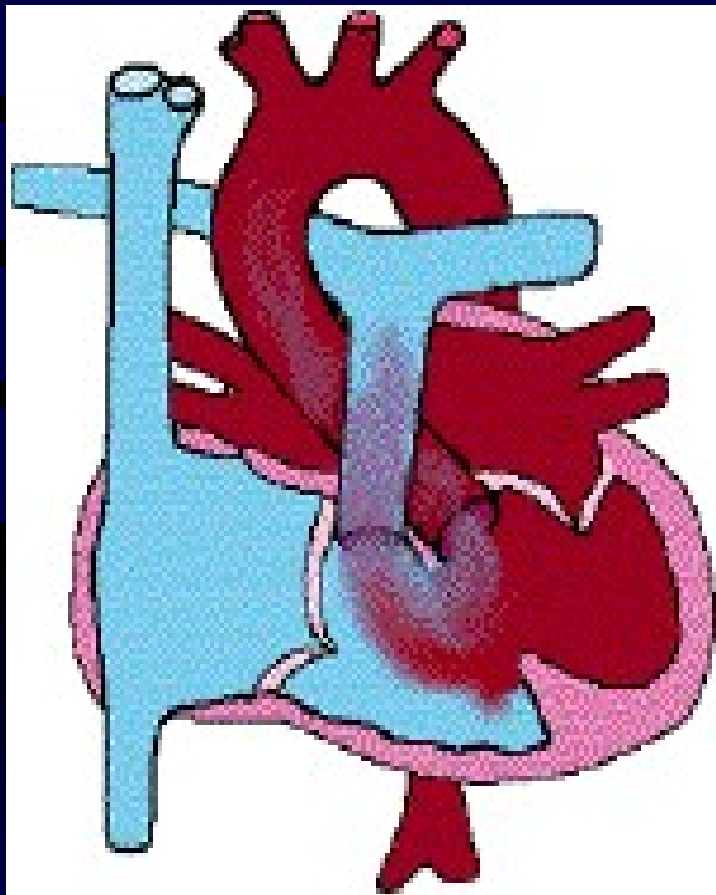
Hypoplastic Left Heart Syndrome

Definition: Left side of the heart fails to develop properly, especially left ventricle

Etiology:

- Congenital birth defect
- Fluke of Nature

Hypoplastic Left Heart Syndrome



Hypoplastic Left Heart Syndrome

Symptoms:

- FTT
- Excessively sweating
- Cyanosis
- Paleness
- Tachypnea

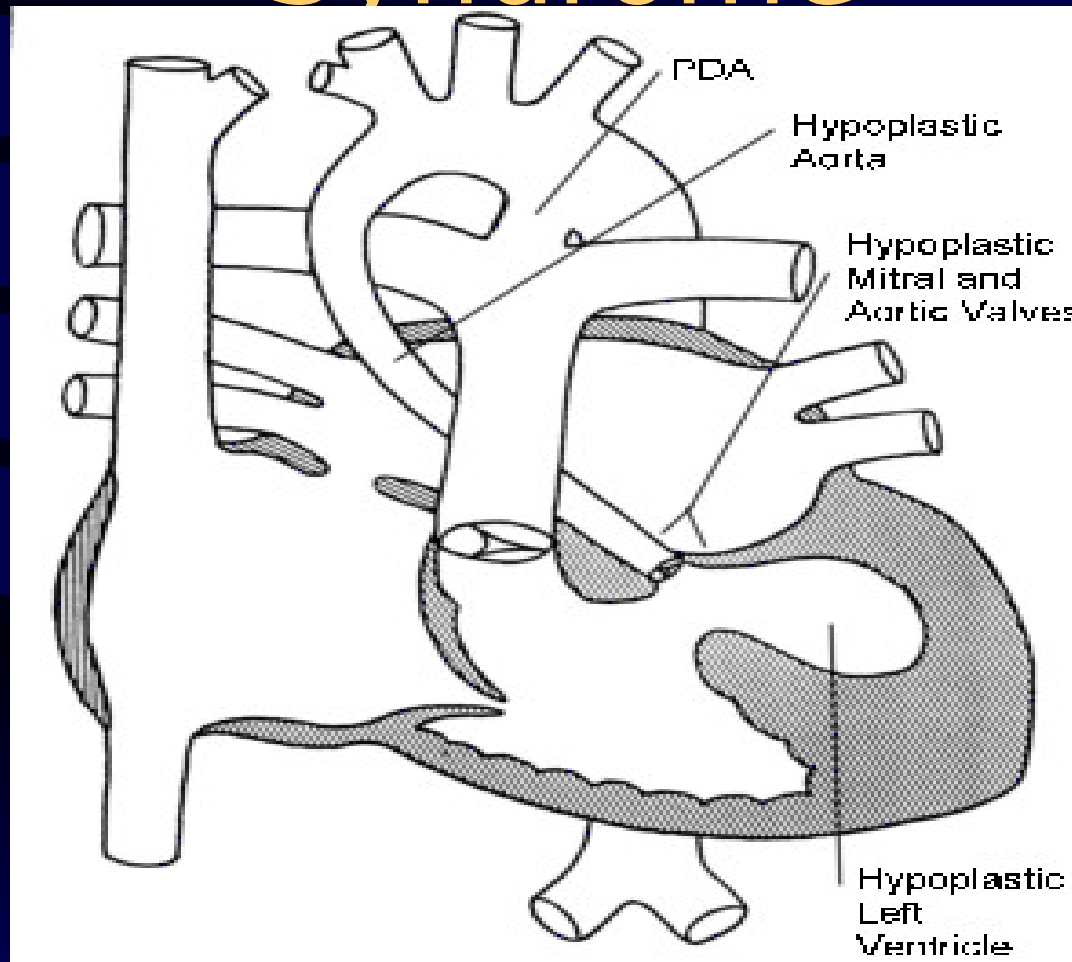


Hypoplastic Left Heart Syndrome

Treatment:

- Norwood Procedure
 - Norwood operation
 - Bidirectional Glenn operation
 - Fontan operation
- Heart Transplant

Hypoplastic Left Heart Syndrome



Hypoplastic Left Heart Syndrome

Prognosis:

- <95% without treatment
- 80% survival rate following Norwood Operation
- 100% survival rate following Bidirectional Glenn Operation
- Survival at 5 years around 70-75%
- Oldest person to undergo 3-stage operation -12YO

Hypoplastic Left Heart Syndrome

Nutrition Implications:

- FTT
- Feeding problems due to requiring a lot of energy
- Extra work of breathing burns most of the calories they intake

MH's Medical Treatment

PMH:

- HLHS, s/p Fontan and re-do
- FTT, s/p g-tube placement and removal
- Temporary vocal cord paralysis after initial surgery, resolved

MH's Medical Treatment

PSH:

- Balloon atrial septostomy (4/19/99)
- Aortic Valvuloplasty (4/20/99)
- Norwood Operation
- Bidirectional Glenn Shunt (9/17/99)
- Re-fenestration of Fontan (10/26/00)
- H/O multiple cardiac catheterizations

MH's Medical Treatment

Social History:

- Daycare 3X/week
- Woke up mom when called

Current Treatment:

- 24 hour Holter Monitor
- Metolazone
- IV Lasix



Nutrition History

Diet at home:

- 3 meals plus 2 snacks
- Always asking for more food
- Mom adds carnation instant breakfast to milk and other foods
- Loves H₂O, meat
- Fat-free milk due to chylothorax

Physical Exam (CDC Growth Chart)

- Wt: 12 kg (wt/age:5-10%ile)
- Ht: 86.4cm (ht/age:<5%ile)
- Wt/Ht: 25-50%ile
- HC: 47cm (5-10%ile)
- IBW for Ht: 12.3kg
- %IBW: 97.5%

Medications

- Captopril—Anti-CHF
 - Insure adequate fluid intake, ↓ Na
- Digoxin—Anti-CHF
 - Anorexia, ↓ wt
- Lasix—Diuretic
 - K-depleting

Medications

- Aldactone—Diuretic
 - K-sparing
- Metolazone—Diuretic
 - K-depleting
- KCl—Electrolyte

Nutritionally Significant Labs

- Pre-Alb 11.8 (6.7-32)
- Alb 4.5 (3.5-5.0)
- K 3.9-4.1 (3.4-4.7)

Assessment of Nutritional Status

Nutritional Diagnostic Statement:

Pt. at risk for protein-energy malnutrition secondary to HLHS and heart surgeries resulting in ↑ energy and protein needs as shown by poor PO intake PTA, wt/age 5-10%ile, ht/age <5%ile, HC 5-10%ile, and low-normal pre-albumin.

Assessment of Nutritional Status

- Caloric Needs: 150 kcal/kg/day
 - 1800kcal/day
- Protein Needs: 3g/kg/day
 - 36g/day
- Fluid Needs: maintenance fluid
 - 1110cc/day

MNT Care Plan

Goal of Therapy: To promote catch-up growth.

Recommendations/Plan:

1. Establish complete resolution of chylothorax with cardiologist, so we can switch to whole milk.
2. Give pt. Resource to take home to drink in place of juice.
3. MVI

Outcomes of Care

- Potential Health Outcomes:
 - Catch up growth
 - Improved anthropometric measures
 - Optimal growth and development
- Potential Resources Saved
 - Decreased hospitalizations

Questions?